QoS Broker

Parent Server Module

- Set up partial subscription paths that goes through the clouds
- Remove the partial subscription paths

Parent Client Module

- Request inter-cloud subscription paths
- Forward information about the event channels that are controlled by a ancestor QoS Broker

Children Server Module

Connects together the other modules

State Module

Contains all the state information about the QoS Brokers that are controlled

Children Client Module

- Request inter-cloud subscription paths
- Remove inter-cloud subscription path

Routing Module

Contains the routing algorithm

Leaf QoS Broker

State Module

Contains all the state information about the cloud that is controlled

Parent Client Command Module

- Request inter-cloud subscription paths
- Forward information about the event channels that are controlled by a ancestor QoS Broker

To QoS

Routing Module

Contains the routing algorithm

Methods Module

Connects together the other modules

Parent Server Command Module

- Set up partial subscription paths that goes through this cloud
- Remove the partial subscription paths

From QoS

SR Server Command Module

- Register publisher/subscriber
- Unregister publisher/subscriber
- Add/Remove publication
- Add/Remove subscriptions
- Add/Remove condensation fun.
- SR update status

SR Client Command Module

- Add/Remove event channels
- Add/Remove subscriptions
- Add/Remove flooded variables
- Add/Remove condensation fun.

From SR

From SR

From SR

To SR

To SR

To SR

(Edge) Status Router

Condensation Creator

API to app. layer

Command Module

- Register cond. creator.
- Register cond. fun.
- Unregister cond. creator.
- Unregister cond. fun.

From Cond.

Command Module

Command Module

- Add/Remove comm. links
- Add/Remove subscriptions
- Add//Remove flooded variables
- Add/Remove condensation fun.

(PublSublCond) proxy Module

- Register/Unreg. publication
- Register/Unreg. subscriptions
- Register/Unreg. cond. fun.
- Inform subscriber about errors

To/From Subscriber

Update tabls

Event Module

From Publisher

Input Module

ReaderThread 1 from UDP socket

...

ReaderThread n from UDP socket

Routing with filtering Module

RoutingTbl

LevelTbl

Output Module

Queue — WriterThread 1 to UDP socket

...

Queue — WriterThread n to UDP socket

Event Channel

Condensation Module

Queue — TriggerThread 1 — fun.

...

Queue — TriggerThread n — fun.

Publisher

API to application layer

Command Module

- Register publisher
- Register variable
- Unregister pub.
- Unregister var.

Event Module

Writer to UDP socket

- PublishEvent

Event Channel

Subscriber

API to application layer

Command Module

- Register subscriber
- Subscribe variable
- Unregister sub.
- Unsubscribe var.

Event Module

Reader from UDP socket

- Handle events

Holder object

- SetValue
- ReadValue
- RegisterCallBack
- RegisterQoSCallBack
- UnregisterCallBack
- UnregisterQoSCallBack